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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,602	09/22/2003	Paul S. Meissner	PF200D1C1	6731

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EXAMINER	
SPECTOR, LORRAINE	

ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/665,602	MEISSNER ET AL.	
	Examiner	Art Unit	
	Lorraine Spector, Ph.D.	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15 and 21-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15 and 21-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/22/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 15 and 21-43 are pending and under consideration. All non-elected claims having been cancelled, applicants traversal of the restriction requirement is moot.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

Claims 40 and 41 are objected to because of the following informalities:

The claims do not end with a period.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 15 and 21-43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention.

The factors considered when determining if the disclosure satisfies the enablement requirement and whether any necessary experimentation is "undue" include, but are not limited to:

1) nature of the invention, 2) state of the prior art, 3) relative skill of those in the art, 4) level of predictability in the art, 5) existence of working examples, 6) breadth of claims, 7) amount of direction or guidance by the inventor, and 8) quantity of experimentation needed to make or use the invention. In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

The utility as set forth at page 14 of the specification is that of pancreatic cancer diagnosis. Stimulation of wound healing and angiogenesis are also disclosed. However, there is no demonstration of any activity of the protein to which the claimed antibodies bind, such that it is not predictable that the protein would have wound healing or angiogenic activity. The nature of the invention is that criptin is a novel protein, without significant homology to any known growth- or angiogenic-factor. The levels of unpredictability in the art is high- it is not recognized that a property such angiogenic or other growth-factor activity would be possessed by a novel protein. Further, the art recognizes that such an assertion is not credible in the absence of either (a) a very high degree of homology to a known protein with the same function, or (b) an assay in which such activity is demonstrated. There are no working examples in which the criptin protein was used to stimulate growth or angiogenesis of any type of cell in any condition or situation. The specification teaches that the mature criptin protein has the putative activity of wound healing and angiogenesis. The prior art teaches a structurally related protein called "cripto" which has been identified as a cancer marker, as well as a related gene called CR-3, the function of which is also unknown. Neither of these prior art proteins is disclosed as having a transmembrane domain, unlike the instant protein (see page 4 of the specification). In the current instance the nature of the invention is largely unknown since the related prior art proteins have no described function except as tumor cell markers and have a conserved "EGF motif" which confers some structural form. There are no examples of criptin protein promoting wound healing or angiogenesis. The list of tissue in which it may promote wound healing is diverse: skin, bone, muscle, lung..., and no specific tissue is identified nor under what circumstances criptin can actually romote wound healing ((e.g. cellular state of tissue, effective amount, *in vivo* vs. *in vitro*, etc.). Therefore, the specification merely proposes possible functions for the

protein, none of which would be considered to be enabled by the person of ordinary skill in the art in the absence of any characterization as to specific activities and cell types on which the protein might have activity. Accordingly, it is not predictable that the protein has such activity, and the antibodies are not enabled as they are drawn to a protein with such activity.

With respect to the use of the claimed antibodies as a cancer diagnostic, such is not enabled because it is asserted for the nucleic acids only. With respect to such nucleic acids, it is not disclosed how the level of expression compares to expression in normal noncancerous cells, nor if the expression was analyzed in cell cultures or in cancerous tissue, and in either case, what type. Such cell lines or tumors are representative only of a single sampole, which is not enough information to conclude that the nucleic acid may be used as a diagnostic. Further, depending upon how much the nucleic acid is amplified, and whether it is associated with a particular cancer in a manner significant enough to be of diagnostic use, it is not predictable that the protein to which the claimed antibodies bind would also be expressed in a manner that would be diagnostic. Accordingly, the use of the claimed antibodies as a diagnostic tool is not enabled, as the specification merely presents an invitation to experiment to determine if the claimed antibodies could be so used.

Claims 15, 26, 27, 33-42 are further rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The deposit of biological organisms is considered by the Examiner to be necessary for enablement of the current invention (see 37 C.F.R.§1.808(a)). Examiner acknowledges the deposit of organisms under accession numbers 97142 under terms of the Budapest Treaty on International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure in partial compliance with this requirement. However, in order to be fully compliant with the requirement, applicants must state that all

restrictions on the availability to the public of the deposited material will be irrevocably removed upon the granting of a patent. See 37 C.F.R.§1.808(a)(2).

Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no written description of a glycosylated form of the protein of SEQ ID NO: 2. As it is not known where or if the protein is glycosylated, there is inadequate written description to support claims to an antibody that would bind such a glycosylated form. The mere statement at paragraph [0070] of the specification that the protein may or may not be glycosylated does not constitute a description of a glycosylated protein.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116).

While one can envision the non-glycosylated protein and therefore antibodies that bind to it, one cannot envision how or where the protein might be glycosylated, and how that might change the immunogenic properties of the protein. Adequate written description requires more than a mere statement that antibodies to a glycosylated protein are part of the invention and reference to a potential method of isolating such. See Fiers v. Revel, 25 USPQ2d 1601 at 1606 (CAFC 1993) and Amgen Inc. v. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016.

One cannot describe what one has not conceived. See Fiddes v. Baird, 30 USPQ2d 1481 at 1483. In Fiddes, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification

provided only the bovine sequence. In this case, a putative protein has been disclosed. It has not been characterized on the basis of glycosylation, nor is there any disclosure of where or how one might glycosylated it if such does not occur *in vivo.* Accordingly, there is no written descriptive support for antibodies that would bind specifically to the glycosylated portions of the protein.

Therefore, only antibodies that bind to the protein of SEQ ID NO: 2, but not the full breadth of the claim as it is drawn to antibodies that would preferentially bind to glycosylated forms of the protein meet the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-34, 39 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 28-34 are indefinite because they read on *any* antibody produced by the animal, and fail to adequately point out that which applicant sees as the invention. Further, as they depend from the *protein* of claim 15 as opposed to the antibody or fragment thereof that is the subject of claim 15, they fail to further limit the independent claim, being broader than that claim.

Claim 39 is indefinite as it is not clear how the recitation that the antibody can be used in a particular assay further limits the claimed antibody; the person of ordinary skill in the art would reasonably expect any antibody of the claim from which this claim depends to be so usable.

Claim 42 is incomplete. The claim as written is a "method of detecting", by "detecting", which is not a method step. The claim should be amended to indicate that the result of step (a) is the formation of a complex, and detection of that complex

indicates that protein is present. Further, the claim fails to further limit the claim from which it depends, as an assay method does not further limit an antibody.

The remaining claims are rejected for depending from an indefinite claim.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Lorraine M. Spector. Dr. Spector can normally be reached Monday through Friday, 9:00 A.M. to 3:00 P.M. at telephone number 571-272-0893.

If attempts to reach the Examiner by telephone are unsuccessful, please contact the Examiner's supervisor, Ms. Brenda Brumback, at telephone number 571-272-0961.

Certain papers related to this application may be submitted to Technology Center 1600 by facsimile transmission The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). NOTE: If Applicant does submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Official papers filed by fax should be directed to **571-273-8300**. Faxed draft or informal communications with the examiner should be directed to ***571-273-0893.***

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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